Bureau of the Census in taking the manufactures census and proposes during the winter of 1916–1917 to devote one meeting to a consideration of statistics as an adjunct to business administration.

E. W. KOPF.

The Mathematical Theory of Probabilities and Its Application to Frequency Curves and Statistical Methods. By Arne Fisher. Volume I. Mathematical Probabilities and Homograde Statistics. New York: The Macmillan Company, 1915. Pp. xx+171.

Statisticians will welcome the appearance of Fisher's treatise because of the scarcity of such texts in the English language, and particularly because of the clearness and judgment with which the present book is written. They will await the appearance of the second volume with impatience; for it is in that volume that the more advanced development of statistical methods will be given. The present part deals almost entirely with the mathematics and the philosophy which underlie the theory of probability and which cannot be hastily put aside if a really fundamental knowledge of its applications to statistics is to be acquired.

The titles of the different chapters, with their initial page numbers, will indicate briefly the contents of the book:

I. Introduction: General Principles and Philosophical Aspects, p. 1. II. Historical and Bibliographical Notes, p. 11. III. The Mathematical Theory of Probabilities, p. 17. IV. The Addition and Multiplication Theorems in Probabilities, p. 26. V. Mathematical Expectation, p. 49. VI. Probability a Posteriori, p. 54. VII. The Law of Large Numbers, p. 82. VIII. Introductory Formulas from the Infinitesimal Calculus, p. 90. IX. Law of Large Numbers: Mathematical Deduction, p. 96. X. The Theory of Dispersion and the Criterions of Lexis and Charlier, p. 117. XI. Application to Games of Chance and Statistical Problems, p. 127. XII. Continuation of the Application of the Theory of Probabilities to Homograde Statistical Series, p. 146.

There has been so much discussion, if not controversy, concerning the foundation of the theory of probabilities, whether it should be upon an *a priori* or *a posteriori* basis that the author's careful discussion of the value and of the necessity of both bases is particularly welcome; he says in particular how careful one must be in the application of Bayes's Rule, and how a careless application of the Rule has been responsible for some of the distrust of the whole theory of *a posteriori* probability. Indeed it may well be said that the necessity for critical care in all statistical work is the impression which the reader gets most strongly from the text, as a quotation from the final section will show:

"A statistical research may be likened to the navigation of a difficult waterway, full of hidden rocks and skerries out of sight to the navigator. The amateur statistician, sailing the ocean in a blind and happy-go-lucky manner, often comes to grief on those rocks and suffers a total shipwreck.

The skillful navigator, the mathematically trained statistician, is always on the lookout for the sea marks. In the Lexian Ratio and the Charlier Coefficient of Disturbancy he recognizes a beacon light, often signalling 'Danger ahead.' He stops his engines. In case he does not possess the particular charts giving the exact location of the hidden reefs his prudence advises him to call a pilot to bring his ship safely into harbor. On the other hand, if he has reliable charts and knows his profession thoroughly he may venture forth and do his own piloting, by a study of the charts. It is to the study of such charts—*i. e.*, a special study of the higher statistical characterisitcs—that we shall turn our attention in the second part of this treatise. The reader who has followed us up to this point may perhaps feel discouraged by realizing how little he has gained in knowledge after having learned a mass of technical detail and formulas. We can quite appreciate and understand this feeling. So far, he has perhaps chiefly been impressed by the treacherous and misleading character of statistical mass phenomena, but to recognize a danger signal and thus avoid the pitfalls is one of the fundamental essentials in safe navigation in statistical research."

The typography of the book is excellent and the style also generally idiomatic, though occasionally there is evidence that the author wrote originally in Danish, and that in the translation an occasional slip has been made which will interest and not confuse the reader.

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THE MEMORIAL VOLUME.

The delay in publishing the *Memorial Volume* of the American Statistical Association requires some explanation.

Prior to the outbreak of the Great War a number of articles on the History and Organization of Official Statistics in various countries had been received, but some of the most important essays were still missing. Those on Russian, German and Swedish Statistics have been finished *during the war.*

At the present time there are at hand and in page-proof articles on the official statistics of the following countries: Australia, Austria, Belgium, Canada, Denmark, Germany, Great Britain (including Ireland), Holland, Hungary, India, Norway, Russia, Sweden, and the United States.

Many difficulties have prevented the completion of the French, Italian, and Japanese studies. That a country so important statistically as well as in other respects as France, for instance, could not be omitted from our volume without seriously marring an important piece of work goes almost without saying. The alternative of printing these delayed articles in our regular QUARTERLY PUBLICATIONS did not appeal to the committee, and it has therefore been resolved to postpone publication until at least the promised study of French official statistics shall have been completed. And reason-